WHEATON

THE CONSERVATION OF ARTIFACTS FROM THE OXON HILL SITE (18 PR175)

As part of the mitigation performed by Garrow and Associates, conservation treatments were performed on site in order to stabilize as many artifacts as possible in a twenty-day period. This length of time is very short for many preservation treatments, which often require weeks for success. Nevertheless, by performing treatments on different classes of artifacts simultaneously, and by performing mass treatments where possible, conservation was streamlined so that more than 275 small finds, or bags of small finds, were processed by the conservator during this time.

The classes of materials treated included copper and lead alloys, silver, leather, fabric, and small wood; about 90% of these artifacts from 18th and 19th century provenience were treated. Other classes treated to a lesser degree were iron, glass, shell, and bone.

SETTING PRIORITIES

Because of time constraints, priorities had to be established. Wet organic materials from the well (leather, textile, paper, and reed) were given top priority. Small pieces of worked wood, like pegs and spatulas, also were given top priority. Large structural timbers and boards, however, were regarded as too expensive and time-consuming to conserve, and were instead wrapped and kept damp until identification of species could be made in Atlanta.

Small finds of copper, lead, and silver constituted the next level, because of their relative ease of treatment. Many datable artifacts, including buttons and coins, fell into this group, as did personal effects, like jewelry and buckles.

Iron, which is notoriously difficult to stabilize quickly and easily, was given the lowest priority <u>as a class</u>, although 51 iron artifacts were chosen and treated. Factors considered for iron were the uniqueness of an artifact, its diagnostic importance, and its possible value for publication or future display. A representative sample of architectural iron (shutter parts, hinges, locks, keys) was selected, as well as artifacts that indicated plantation activities (hoes, harness parts, horse shoe, file). Many iron artifacts (like barrel hoops or chain fragments) that could be readily identified despite their encrustations were rejected for treatment.

ORGANIZING THE WORK AREA

Small equipment, chemicals, and supplies were purchased for Garrow and Associates by the contractor. A list of these supplies, which may prove useful for organizing future excavations, is found in Appendix A. Most materials were purchased from a local hardware store, from Fisher Chemicals in Silver Spring, or from Conservation Materials Ltd. in Sparks, Nevada. The contractor also provided incidental equipment.

A small corner of the processing warehouse in Upper Marlboro was set aside for conservation activities. Access to an electrical outlet and proximity to a sink were factors in the location. Mechanical cleaning of artifacts was performed on a table, while "dirtier" processes, like chiseling encrustations off iron or processing wet materials, were carried out nearby on the floor. A small electrolytic tank and a two burner hot plate were set up for processing and boiling iron.

The hot washing of iron required large volumes of deionized water. While Garrow and Associates paid for a disposable deionizing column for the project, the contractor's unit at home was used for purification, and the treated water had to brought by car everyday. Installation of a unit at the processing warehouse would have tied up a tap, and would have been an inconvenience for the employees washing artifacts.

Metallic artifacts, unidentifiable or unusual artifacts, or materials recovered wet from the site were separated out by the washers, and a notation was made of the artifacts' removal for conservation. The conservator then separated the artifacts by material (copper, lead, iron, glass, wood, leather, and textile) so that artifacts could be mass treated when possible. Throughout the stages of treatment, the provenience number stayed with each artifact. Artifacts which were rejected for conservation were returned to the cataloguers.

A treatment form for individual artifacts and clusters of similar artifacts was filled out as conservation proceeded. This form has been duplicated in Appendix B. Quick diagrams were attached to the form before artifacts were mass treated, in order to facilitate identification. Notations often were made of inscriptions, encrustations, or associated materials, although no real analyses or spot tests could be performed because of time. The treatment records submitted with this report should remain as part of the written records of the Oxon Hill project and should be curated with the collection.

SUMMARY OF TREATMENTS PERFORMED

Glass. Iridescent glass was washed with tap water with a soft brush, taking care not to dislodge the peeling or loose layers of deteriorated glass. A non-ionic detergent with a neutral pH, Triton X-100, was used as a surfactant. The glass was rinsed with tap water, and then with deionized water. The glass was then dewatered with acetone and/or denatured alocohol. Two to three applications of an acrylic copolymer resin, Acryloid B-72, a 3-5% solution in toluene and acetone, was applied by swab. Acetone was often applied first to encourage the resin to penetrate the layers of rotten glass. Successive layers were applied until the deteriorated glass seemed secured. No acidic treatments were performed to remove the layers of patinated glass.

Copper alloys. Copper and its alloys (brass, bronze) were mechanically cleaned using scalpels and a variety of glass fiber brushes. Heavier encrustations were sometimes removed with an electric engraving tool, which, if used carefully, could sheer off corrosion products to reveal the "original surface" of the artifact. Formic acid (15%) was also used to dissolve carbonate corrosion products, although care had to be exercised with the chemical to avoid producing cuprite, a tenacious red oxide that is redeposited onto the surface as the carbonate is dissolved.

The artifacts were then immersed in a chemical inhibitor for copper called benzotriazole (BTA), a 3% solution in ethanol. For most artifacts, this was done overnight. The benzotriazole associates both chemically and physically with the copper to effectively "tie up" its reactive sites and prevent any attack by chlorides and moisture which results in the light green, powdery corrosion called "bronze disease" (basic cupric chloride). Although only a few artifacts had active bronze disease upon excavation, treating copper alloys with benzotriazole is really a preventive measure against future outbreaks caused by high humidity and contamination with handling. After soaking in the benzotriazole, the artifacts were passed quickly through denatured alcohol, allowed to dry at room temperature, and coated with a 5% solution of Acryloid B-72 in toluene and acetone applied by brush.

Silver. The few silver artifacts that were processed were cleaned mechanically with a glass fiber brush and/or chemically with 15% formic acid. The artifacts then were degreased with acetone, and lacquered with 5% Acryloid B-72. If the silver appeared to have been alloyed with copper (with green copper carbonate corrosion products on the surface), it was treated with benzotriazole before lacquering.

Lead. Lead, its alloy pewter, and some unidentifiable white metals were cleaned mechanically with a glass brush and scalpel. A 5% solution of EDTA (disodium salt of ethylene diamine triacetic acid) was used to dissolve the carbonate encrustation, although care had to be exercised to prevent the lead

itself from being etched by the chemical. The artifacts were then rinsed in deionized water, dewatered in acetone, and waxed with a microcrystalline wax paste (Bareco B-Square in naphtha).

Iron. Iron artifacts which seemed to be robust and have a sound core of metal (positive "pull" with a magnet), were cleaned using electrolysis. Electrolytic reduction strips away all the layers of rust and corrosion, leaving only a core of uncorroded metal. Often, however, the remaining core is only a vestige dimensionally of the original object. Unlike copper alloys and their compact "original surfaces", iron artifacts have a more voluminous corrosion product, and the original surface may be trapped or sandwiched in the rust, only to be removed by electrolysis.

The electrolytic unit was run on a 6-amp car battery, using a 5-gallon plastic bucket to hold the electrolyte and copper pipe and galvanized sheet metal as electrodes. A 5% solution of sodium carbonate served as the electrolyte. Because of time constraints, artifacts were electrolytically reduced only one to two days, just to get the corroded crust off.

Iron artifacts which were too fragile for electrolysis were cleaned mechanically, using a hammer and small screw driver to carefully remove corrosion and essentially "sculpt" a surface. An electric engraver was also used to remove corrosion.

In some cases a combination of electrolysis and mechanical cleaning was used.

Following the removal of the corrosion by electrolysis and/or mechanical cleaning, the iron was boiled for a minimum of two days in changes of deionized water. The hot wash water was changed at least five times a day. The boiling was necessary to flush out the reactive chlorides as well as any residual electrolyte. Because of time constraints, prolonged hot washing was not possible. However, it is felt that a large amount of the reactive salts was probably removed in two days of boiling.

After the hot wash, the artifacts were placed, while still hot and wet, into molten microcrystalline wax (Multiwax W445) and heated until all the moisture was driven off. The artifacts were then removed from the wax and dried. Excess wax was removed by blotting the surfaces with paper towels and/or swabbing with naphtha.

A few very fragile iron artifacts, or iron combined with an organic material like bone, were unsuitable for boiling. Instead, after mechanical cleaning these artifacts were sprayed heavily with CRC 5-56 and then placed into the molten wax. While not ideal, this effort should preserve the artifacts for some time.

Leather. The well yielded a great number of shoe parts which were effectively mass treated. The fragments were washed first in tap water using a soft brush and Triton X-100 non-ionic detergent as a surfactant. The leather was rinsed in tap water, and then in deionized water for a few minutes. The fragments were then dewatered for an hour in a solvent (denatured alcohol). In some cases two dewatering baths, each an hour, of alcohol or alcohol followed by acetone were used. This difference in processing was based on an effort to economize, because the volumes of solvent needed to dewater leather makes its preservation very expensive.

The leather was then placed from the solvent bath into a solution of 15% Bavon ASAK-APB in stoddard solvent. Bavon is a commercial leather dressing, based on polyhydric alcohol ester-hydrocarbon copoymer and mineral oil. The leather remained in the lubricating bath at least overnight; often this stage of the treatment was carried out over a weekend. After lubricating, the fragments were dried flat on newspaper and paper toweling under weights. The paper was changed as needed, and drying lasted one to two days.

One piece of leather, a fragment of chair upholstery, was treated with a 5% solution of EDTA before dewatering and lubricating. The EDTA was used to dissolve any discoloring iron salts in the leather, thus lightening the color of the leather and returning it to a more natural color. Because of the relative importance of the chair leather, it was felt that an EDTA pre-treatment was warranted.

Fragmentary leather was backed with nylon netting, using Rhoplex AC-33 acrylic emulsion as an adhesive. All leather was wrapped in acid-free tissue.

Textiles. Fragments of textiles, including silk, were also washed in tap water using Triton detergent and a fine brush to loosen the dirt. The textiles were rinsed in deionized water, and then placed in a 1% solution of ethulose, a water soluble cellulose, for 7 to 14 days. The ethulose bonds with and strengthens the remaining fibers. The fragments were removed from the soaking solution and dried flat on plastic. While the fragments were still wet, the warp and weft of the weave were straightened. The pieces were then housed in archival-quality supports of mylar and acid-free board. No bleaching treatments were performed on the textiles.

Two unusual artifacts, a tobacco leaf (?) and a paper pouch (?) were treated with ethulose as above.

Wood. While large architectural timbers were not conserved, small pieces of worked wood like moldings or pegs were treated. Some fragments were placed in a 10% solution of PEG 1500 (a water soluble wax) to soak at room temperature for five weeks. Lysol disinfectant was added to the solution as a fungicide. Usually a PEG treatment takes much longer, up to a year

of soaking and/or spraying during controlled and slow drying. Unfortunately, the time frame for conservation did not allow for these options. Because of the small sizes of the pieces, a reasonable result was achieved despite the shortened soak.

Even more surprising were the results achieved with a relatively new and experimental treatment that uses sucrose as a soaking solution. Both 3 and 6% solutions of the sugar (Domino Brownulated Sugar) were used, and, for comparison, 3 and 6% solutions of fructose. Artifacts of similar size were selected for the solutions, and for convenience the treatments were carried out in the artifacts' zip-lock bags. A small amount of Lysol was added to of the four sugar solutions. The wood was allowed to soak for two weeks and then the pieces were removed and allowed to air dry for almost a week.

In general, the sucrose results were better than the fructose and on a par with PEG 1500. Again, however, the small sizes of the artifacts probably contributed a great deal to the overall success of the treatments.

Generally, then, the wood treated with PEG and sucrose gave an acceptable result. Less successful were many of the pieces of cork treated with these solutions. This may have been due to the variability of the cork itself, i.e. degree of degradation, compactness of fiber.

CONCLUSION AND RECOMMENDATIONS

The Oxon Hill project proved that conservation can be an effective component of a mitigation and that many of the treatments can be performed in the field while the excavation is in process, even if the work is carried out in an environment which is hardly laboratory-like. Two pieces of equipment missing here which would have facilitated treatments are a vacuuum desiccator with a hand pump (moderately expensive) and an ultasonic cleaner (very expensive). The desiccator would have been useful for applying benzotriazole as well as consolidants. The ultrasonic cleaner would have made the cleaning and treating of fibrous materials like wet textiles and leather easier.

Ideally, during a project like Oxon Hill conservation should be a full-time, not part-time, activity. Throughout the project, the conservator can be a valuable member of the team, providing advice for lifting artifacts in the field or packing them for transport, identifying or analyzing materials, or planning for the long-term problems associated with curating a diverse collection. The lengthy treatments--especially hot washing iron and soaking wood-- could be better accommodated in a longer work schedule.

An apprentice conservator, who could be trained on the job to check on the more "dormant" treatments and continue to hot wash the iron if the contracting conservator is absent, would be a valuable asset. This was proven by Aggie Lang, a Garrow employee who worked with me for six days. Her assistance greatly augmented the productivity of the makeshift laboratory.

APPENDIX A. EQUIPMENT AND SUPPLIES

5 prs. vinyl gloves (disposable)
protective goggles
2 small screwdrivers
1 hamburger flipper
1 pr. tongs
1 Dremel engraving tool
1 tack hammer
5 aluminum trays (disposable)
5 particle masks (disposable)
2-1" paint brushes
1 plastic baster
1 syringe
1 enameled boiling pot
2 gallons acetone
1 gallon denatured alcohol
1 galvanized iron sheet (anode)
1 galvanized grill (anode)
copper pipe, copper wire
1 deionizing cartridge (disposable)
6 kilos sodium carbonate
2 boxes scalpels (disposable)
1 large fiberglass brush
1 small brush with fiberglass and stainless steel refills
1 quart Acryloid B-72
1 kilo PVA-AYAT resin
1 quart CM Bond M-3 (PVA emulsion)-- froze solid 1/85
1 quart Bavon ASAK-ABP
2 gallons stoddard solvent
1 pint Triton x-100
100 sheets acid-free tissue
100 grams benzotriazole
1 kilo PEG 1500
5 lbs. Multiwax W445 (microcrystalline wax)

Provided by Jim Legg -

RECEIVED [illegible] 17 '92

BLOCKADE RUNNER MUSEUM, INC.

P. O. DRAWER Q • TELEPHONE 458-5746
CAROLINA BEACH, NORTH CAROLINA 28428

Hi

The procedures on the following pages should answer most metallic artifact cleaning needs. These types of reduction should not be used on pewter, tin, or very thin objects of any metal. These may be represented largely or entirely by oxidation products. Manual cleaning and consolidation with sealant or micro-crystaline wax are best for such artifacts.

Every cleaned item should be boiled in distilled water, thoroughly dried, and sealed from contact with air. I have used a variety of graphics fixatives for sealant. Flat black Rustoleum is good for iron. Plenderlieth. describes various sealants that Ive never used which are doubtless more effective. Indeed, a chemist might find my procedures naive. They usually work, however, and are safe to artifact and user.

Safety- Never breath deeply over any reduction process. The fumes burn lungs and throat. Lye on the skin is no big deal for brief periods, so its safe to handle things in solution as long as the skin is thoroughly rinsed afterward. Never mix lye in a glass container. It will explode. I cant think of any other problems.

Electrolytic reduction using a battery charger is also an option, but one vastly more simple to set up and explain in person.

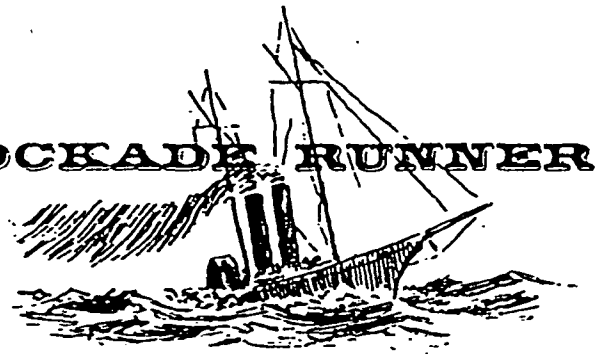
Call or write with any questions.

Jim

if doesn't bubble:

(1) clean zinc w/ wire brush or sandpaper

(2) use a stronger solution (won't hurt iron)



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I. CLEANING OF NON-FERROUS METALLIC ARTIFACTS.

This method is excellent for copper and copper alloys, as well as lead, nickel, and silver. In my experience its safe for plated or washed items like gilted buttons.

Materials: small plastic containers (tupperware or margerine tubs)
household lye
aluminum foil
brass bristle shoe brush (not plated steel)

Procedure:

Treat the artifacts with great care in the field and in manual cleaning. In most cases, small chips to the patina of a coin, button, etc. will show up on the end (cleaned) product because the apparently mineralized layer was in fact largely metallic.

Clean only the soil from the artifact.

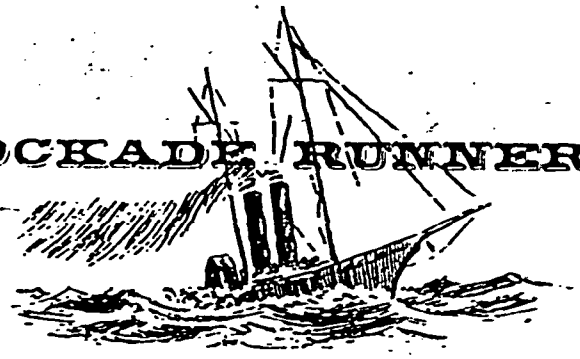
Record any fine detail which might be represented entirely by corrosion products.

Cut a piece of foil several times the surface area of the artifact. Perforate the foil thoroughly. Dampen both foil and artifact, and wrap the artifact in the foil securely but loosely enough to allow liquid to penetrate all around the artifact. Prepare a strong lye solution (10-20%) in warm water, and cover the artifact completely. Agitate briefly to remove air pockets. The foil will rapidly dissolve, giving off very nasty fumes as it does.

The reaction will stop when the foil is reduced. Remove the foil remnant and clean the artifact with a toothbrush. Most of the oxides should rinse away as a black or brown muddy substance (or white in the case of lead.) There will usually be dark spots which failed to clean completely. Simply repeat the procedure. When the artifact is free of visible encrustation and fairly uniform in color, it has been reduced to healthy metal. Rinse thoroughly.

When clean, most artifacts will have a dull, porous surface. Lead items can be burnished with a toothbrush or cloth. Surface treatment of copper based items presents several choices. Most will turn out with a pasty reddish or brown color that looks rather unnatural. They can be (1) sealed as is; (2) allowed to air tarnish dark brown or black before sealing, thus retaining the appearence of excavated artifacts; or (3) burnished with a brass brush to a bright metallic finish, and then sealed.

For purposes of artifact description, it should be noted that copper alloy objects which were originally white or yellow in color will usually turn out very red, as if entirely copper. This is due to the more rapid oxidation of the white metals with which the copper was alloyed. It is, in fact, a copper surface.



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II. CLEANING OF IRON ARTIFACTS WITH ZINC AND LYE REDUCTION.

This is a cheap, simple method for reducing iron oxides. On occasion it fails to take effectively for any of a variety of reasons, but more often it yeilds good results. The process will not damage healthy metal at all, but of course any detail represented by oxides will be completely lost.

Materials: various sized (plastic) containers (tupperware, buckets, etc.)
zinc scraps- various flat pieces, as volume is extraneous
household lye
manual cleaning utensils (steel brush, tack hammer, pliers)

Procedure:

Manually clean the artifact as well as possible. Remove all loose scale and protruding encrustations.

The process involves constructing a wet electric cell. The performance of the cell is directly related to the degree of contact among the three components (metallic iron, oxidizing zinc, and the electrolytic solution)

Surround the artifact with enough zinc to easily exceed the surface area of the artifact. The more zinc the better, assuming good contact with the iron. Again, all but the surface of the zinc is extraneous to the process.

Prepare a strong lye solution (10-20%) in hot water. Heat is an accellerating influence, so it helps to start out with a hot solution. Its not really wrth the trouble to keep the solution heated, however. Cover the artifact and zinc with the solution.

After an hour or so the solution should be giving off lots of gas in the form of small bubbles. If not, it isn't taking and should be rebuilt. Try cleaner zinc, cleaner iron, or more lye. If it is working, let it run for a day or so, even if the reaction slows considerably.

Remove the artifact and clean manually. Repeat the reduction process as necessary. Secondary cleanings need run only an hour or two.

Before sealing any iron artifact, it should be thoroughly boiled in distilled water to remove chlorides, and oven baked to dry it completely.

The zinc pieces will need cleaning after several usages. Abrasion works fine but after a while its good to replace it or melt it down and re-cast it on a cookie sheet. The latter can also provide a variety of useful shapes. (Use a charcoal fire or a blowtorch.)

HARD TO FIND / MISSING

Prov		Lot #
K10100IM72	BONE TOOTH BRUSH	? 1069
K10100205'7	WOOD SHOE HEEL	Acc # 1.2338 ? 1082
K10100205'7	WORKED STAKE?	? 1158?
~~K1010~~		
K 10100207 13	WOOD HANDLE?	1162?

~~Base to Case~~

~~U100 0(80 14~~ ~~8M twisted copper wire~~ 1001

~~K10100IM72~~

(128)

ARTIFACT FIND SHEET
AND TREATMENT RECORD

Site 18PR175 Date logged into conservation 6-5-85

Artifact number _____ Date treatment started 6-5-85

Artifact type _____ Date completed 6-5-85

Date of recovery exc. 5/10/85 WAH Conservator Smigley

(~~Field~~ Log Entry) BAG 3475

Provenience K101001472

Acc # 1.3097

Description bone toothbrush Dimensions 5"

Weight _____

Condition E (G) P

Photo attached ____

___ copper/brass/bronze	X bone, ivory	___ foodstuff
___ lead/tin/pewter	___ cork	___ glass
___ iron/steel	___ wood	___ rubber
___ gold	___ cloth	___ ceramic
___ silver	___ leather	___ stone, clay
___ mineral	___ rope	___ other
___ gem	___ paper	(~~[illegible]~~)

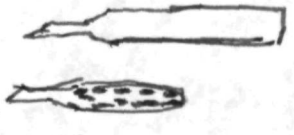
Post excavation history:

Recording:

Photographs _____

Drawing _____

Location: _____



Priorty for treatment: (3) (high) 2 (medium) 1 (low) 0 (none)

Analysis/Examination

Spot tests _____

Chloride test _____(+) _____(-)

____Magnet

____Probe

____Magnification

X-Ray _____

Other _____

green stain from associated copper object

Dates	Treatment Record
6-5-85	washed in deionized HOH + Triton nonionic detergent. Rinsed. dewatered in denatured alcohol 2 hrs. Joined w/ Duco cement after drying

Treatment Summary

___scalpel, pick	___intensive wash, hot	___mended
___wire brush	___intensive wash, cold	___bleached
___glass brush	___de-watered (solvent)	___filled
___air abrasive/sand blast	___oven dried	___consolidated
___electrolytic reduction	___inhibitor	___special support
___chemical cleaning	___coating	___silica gel
___ultrasonic	___reshaped	___biocide

Dates	Photographs	Before treating	After treating

216-245

ARTIFACT FIND SHEET
AND TREATMENT RECORD

Site 18 PR 175 Date logged into conservation JUNE 5, JUNE 14

Artifact number _____ Date treatment started JUNE 5, JUNE 14

Artifact type VARIOUS Date completed JUNE 21, 1985

Date of recovery (Dive Log Entry) _____ Conservator SINGLEY-LANG

Provenience VARIOUS

30 BAGS WITH

Description VARIOUS PIECES OF SMALL WOOD, CORK, PAPER/LEAF ONE FRAG OF WOOD ~~NAILED~~ PAINTED (3441) + ONE (3441) HANDLE MAY HAVE BEEN OILED before buried

Dimensions _____

Weight _____

Condition (E) G P

Photo attached ____

___ copper/brass/bronze	___ bone, ivory	___ foodstuff
___ lead/tin/pewter	___ cork	___ glass
___ iron/steel	x wood	___ rubber
___ gold	___ cloth	___ ceramic
___ silver	___ leather	___ stone, clay
___ mineral	___ rope	___ other
___ gem	___ paper	(x PAPER/LEAF? x CORK

Post excavation history:

Recording:

Photographs _____

Drawing _____

SEE ATTACHED SHEETS

Location: Paper/Tobacco with Acc #'s 2340, 2341 in LOT # 1086
Acc # ~~2347 (Corks)~~, 2306 (CORK), 2345 (Shaped Carved Wood)
wood Molding? Acc # 2340 in LOT 1100
Acc # 6-3844 (molding frag.) LOT # 1229

Priorty for treatment: (3) (high) 2 (medium) 1 (low) 0 (none)

Analysis/Examination

Spot tests _____

Chloride test _____ (+) _____ (-)

____ Magnet

____ Probe

____ Magnification

X-Ray _____

Other _____

NOTE PAPER POUCH OR SACK? NOT LEAF
3 dimensional

Dates	Treatment Record
6-5-85 thru 6-24-85	Fragments were washed in tap water w/ Triton non-ionic detergent + rinsed w/ tap water. Pieces were treated in their bags, which were filled with treatment solutions (3% fructose + sucrose, 6% fructose and sucrose). Lysol disinfectant was added to the solution (4 drops in 300 mls mixed solution) as a fungicide. These treatments were regarded as experimental, although some work using sucrose for treating wood has been carried out successfully. Not enough time for soaking was allowed -- only 2 weeks here. Results were to be compared to wood air dried only, + to wood treated for 2½ weeks w/ PEG. Removed + air dried June 24, 1985. Also, Two batches were put in June 14. No real difference was seen between those pieces treated for one + 2 weeks. Results were variable, sucrose being better in general than fructose. No difference between 3 + 6% solutions. Cork not really successful, especially smaller fragments.

paper/ LEAF stuffed with acid free paper to show 3 dimensions

Treatment Summary

___ scalpel, pick	___ intensive wash, hot	___ mended
___ wire brush	X ~~intensive~~ wash, cold	___ bleached
___ glass brush	___ de-watered (solvent)	___ filled
___ air abrasive/sand blast	___ oven dried	X consolidated
___ electrolytic reduction	___ inhibitor	X special support
___ chemical cleaning	___ coating	___ silica gel
___ ultrasonic	X reshaped	X biocide

Dates	Photographs	Before treating	After treating

3%

FRUCTOSE

JUNE 5, 1985
w/ LYSOL

REMOVED 6/2#/85

①	K101002070	Acc# 2347	BAG 3905	✓ 5/30/85	BGR	✓cork
②	K101002070	"	BAG 3905	✓ 5-30-85	BGR	✓wood bead
③	K101002060	Acc# 2340	BAG 3699	✓ 5-21-85	BGR	2 corks, paper?
④	UGB 774101A	LOT# 1229 → Acc# 6.3844	BAG 3844	✓ 5-30-85	Na	molding frag
⑤	K10100 2060		BAG 3699	✓ 5-21-85	BGR	wood bead
⑥	K101 002061	Acc# 2341	BAG 3738	✓ 5-21-85	BGR	cork + cork frag

3% (?)
SUCROSE (brown NU-LED Domino Sugar) 3-4 tsp per 300 mls
JUNE 5, 1985
w/ LYSOL

REMOVED 6/22/85

①	K101002067	Acc# 1.2345	BAG 3861	✓ 5/28/85	Na	cork
②	K101002070	Acc# 2347	BAG 3905	✓ 5/30/85	BGR	5 corks
③	K101002062	Acc# 1.2342	BAG 3781	✓ Na	Na	pointed wood frag
④	K101002060	Acc# 2340	BAG 3699	O 5-20-85	BGR	molding frag
⑤	K101002061	Acc# 2341	BAG 3738	✓ 5-24-85	Na	serrated wood

6% Fructose
June 5, 1985
w/ Lysol

REMOVED 6/22/85

①	K101002067	Acc# 1.2345	BAG 3861	✓ 5-28-85	Na	cork
②	K101002057	Acc# 1.2338	BAG 3441	✓ Na	BGR	2 pieces ptd wood
③	K101002061	Acc# 1.2341	BAG 3738	✓ 5-21-85	—	CORK
④	K101002067	Acc# 1.2345	BAG 3861	✓ 5-21-85	Na	CORK
⑤	K101002057	Acc# 1.2338	BAG 3441	O Na	Na	printed wood frag
⑥	K101002059	Acc# 2306	BAG 3695	✓ 5-20-85		cork
⑦	K10100 2067	Acc# 1.2345	BAG 3861	✓ 5-29-85		pag "GOLF TEE"

6% (?) sucrose
w/ Lysol
6 tsp in 300
6/5/85

①	K101002057	Acc# 1.2338	BAG 3441	BGR	NaI	O large wood handle
②	K101002060	Acc# 1.2340	BAG 3699	BGR	5-21	✓ cork
③	K101002060	Acc# 1.2340	BAG 3699	BGR	5-21	✓ carved wood
④	K101002061	Acc# 2341	BAG 3738	N/a	N/a	✓ cork
⑤	"	"	"	"	"	✓ cork
⑥	"	"	"	"	"	✓ small wood ring
⑦	"	"	"	"	"	✓ 3 wood pieces
⑧	"	"	"	"	"	✓ tobacco leaf? or paper?

3% FRUCTOSE (15g in 500 mls)
NO LYSOL
JUNE 14

①	K101002070	Acc# 1.2347	BAG 3905	exc. 5/29/85	15 PIECES POINTED WOOD	O
②	K101002067	Acc# 2345	BAG 3861	exc. 5/29/85	11 PIECES "	O
③						
④						

6% FRUCTOSE NO LYSOL (30g in 500 mls) JUNE 14

①	K101002071	Acc# 1.2348	BAG 4068	exc. 6/4/85	16 PIECES WOOD	O

REMOVED 6/22/85

265-273

ARTIFACT FIND SHEET
AND TREATMENT RECORD

Site 18PR175 Date logged into conservation ~~MAY~~ MAY 17, 1985

Artifact number _____ Date treatment started MAY 17, 1985

Artifact type _____ Date completed JUNE 27, 1985

Date of recovery (Dive Log Entry) _____ Conservator SINGLEY

Provenience VARIOUS

Description 9 various pieces of wood to be PEG'd Dimensions _____

Weight _____

Condition (E) G P

Photo attached ____

___ copper/brass/bronze	___ bone, ivory	___ foodstuff	
___ lead/tin/pewter	___ cork	___ glass	
___ iron/steel	X wood	___ rubber	
___ gold	___ cloth	___ ceramic	
___ silver	___ leather	___ stone, clay	
___ mineral	___ rope	___ other	
___ gem	___ paper	(— tortoise shell)	

Post excavation history:

Recording:

Photographs _____

Drawing _____

Location: LOT #1085 (brush handle Acc# 1.2340) VARIOUS - see sheet
LOT # 1100
LOT #1158
LOT #1120 (TURTLE SHELL Acc# 1.2338)

Priorty for treatment: (3) (high) 2 (medium) 1 (low) 0 (none)

Analysis/Examination

Spot tests _____

Chloride test _____(+) _____(-)

____Magnet

____Probe

____Magnification

X-Ray _____

Other _____

_____

Dates	Treatment Record
5-17	Washed in tap water. Placed in 10% PEG @ Room T° to soak for 5 weeks. Lysol disinfectant added to soak to serve as a fungicide, but was not successful in controling scum/odor.
5-21	Pulled out + allowed to dry. No other application of PEG.
6-27	Tortoise shell glued w/ Rhoplex AC-33 acrylic emulsion

Treatment Summary

___scalpel, pick	___intensive wash, hot	___mended
___wire brush	X ~~intensive~~ wash, cold	___bleached
___glass brush	___de-watered (solvent)	___filled
___air abrasive/sand blast	___oven dried	X consolidated
___electrolytic reduction	___inhibitor	___special support
___chemical cleaning	___coating	___silica gel
___ultrasonic	___reshaped	___biocide

Dates	Photographs	Before treating	After treating

shoe heel ?
K101002057
BAG 3441
5/15/85
BGR
placed in PEG 5/17/85

LOT# 1100

peg and handle
K101002057
BAG 3441
placed in PEG 5/17/85

LOT# 1120

K101002057
BAG3441
5/15/85 BGR
turtle shell
placed in PEG 5/17/85

LOT# 1100

K101002057
BAG 3441
5/15/85 BGR
lid
placed in PEG 5/17

LOT 1156

K1S1002057
BAG 3441
5-15-85 BGR
wood
placed in PEG 5/17/85

LOT# 1158

K101002057
BAG 3441
5-15-85 BGR
handle?
placed in PEG 5-17-85

K101002057 worked stake->
BAG 3441
5-15-85 Placed in PEG 5/17

BAG 4068
K1001002071
6/14/85
placed in PEG 6-10-85

10% PEG SOAK
FOR WOOD

If you put small wood in here :

ⓐ wash off dirt + clay first + wash bag

ⓑ draw piece + its number on back of the sheet. Record the date

ⓒ punch holes in the zip lock bag

ⓓ place bag in PEG solution + make sure solution gets in.

THE PEG may dissolve the pink tag number, so make sure you draw the piece first!
CYA!

Also record the day you put the wood in.

K10102060
BAG 3699
exc. 5/21/85
brush handle
put in 6/10/85
Acc#2340

LOT# 1085